

4 Money creation & framework of monetary policy

4.1 Learning outcomes

After studying this text the learner should / should be able to:

- Define the components of money and its measurement.
- Describe the sources of money creation.
- Define monetary policy and comprehend its statutory environment.
- Discuss the objectives of monetary policy.
- Describe the inflation targeting monetary policy framework.
- Deliberate on monetary policy accountability and transparency.
- Discuss the limitations of monetary policy.
- Describe the instruments and operation of monetary policy.
- Expound the significance of the independence of central banks.

4.2 Introduction

Formulation and implementation of monetary policy (aimed at achieving and maintaining price stability)
Formulation of monetary policy framework
Influence on level of interest rates (through bank liquidity management)
Open market operations
Banker and advisor to government
Banker to government
Public debt management
Administration of exchange controls
Management of the money and banking system
Lender of last resort (note: not a monetary policy function)
Currency management (notes and coins)
Banker to private sector banks
Settlement of interbank claims
Bank supervision
Supervision of payments system
Management of gold and foreign exchange reserves
Development of debt market
Provision of economic and statistical services
Provision of internal corporate support services and systems

Table 1: Functions of central banks

Table 1 presents our framework of the functions of central banks. We have left the most significant function to last: monetary policy. It is undisputed that excessive growth in the money stock is the cause of inflation. Because high inflation has a major negative impact on the economy, we need a policy in respect of money stock growth: a *monetary policy*. All countries have central banks and a monetary policy in place. However, the policies are not always well formulated, implemented and executed.

In Table 1 monetary policy is afforded three subsections; they are at the heart of monetary policy, but there is much more to discuss, such as measuring money, money creation, the framework of monetary policy and so on. This section is arranged as follows:

- Measuring money.
- Money identity: sources of money creation.
- Statutory environment.
- Objectives of monetary policy.
- Price stability.
- Inflation targeting monetary policy framework.
- Monetary policy accountability and transparency.
- Limitations of monetary policy.
- Instruments of monetary policy.
- Independence of central banks.



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4.3 Measuring money

You know that the stock of money is made up of bank notes and coins and bank deposits in possession of the NBPS. We have two questions in this regard: how do central banks calculate the money stock and what term of bank deposit qualifies as money?

As regards the latter, central banks across the world have various definitions of money, and they range from M1 to M5. They all include bank notes and coins held by the NBPS; where they differ is in the cut-off point of the term to maturity (ttm) of NBPS deposits, and the higher numbers add in other near-money assets. For the sake of simplicity we will use one of the measures: M3. It includes notes and coins (N&C) in the hands of the NBPS and all NBPS deposits with banks, and we justify this on the basis that the vast majority of deposits with banks are short-term in nature.

How does one calculate the NBPS's holdings of N&C? Take a look at the balance sheets of the central bank (called CB from now on) and the banks shown in Balance Sheets 1–2. You will see that the bank notes and coins held by the NBPS can be derived from the two balance sheets:

Total in issue (in the CB's balance sheet = item A)
Less: N&C held by the banks (item C in the banks' collective balance sheet).

Therefore the stock of N&C held by the NBPS:

N&C of NBPS = LCC 1 000 billion – LCC 100 billion
= LCC 900 billion.

BALANCE SHEET 1: CENTRAL BANK (LCC BILLIONS)			
Assets		Liabilities	
D. Foreign assets	1 000	A. Notes and coins	1 000
E. Loans to government	1 100	B. Deposits	
F. Loans to banks (borrowed reserves – BR) @ KIR	400	1. Government	900
		2. Banks' reserve accounts (TR)	500
		C. Foreign loans	100
Total	2 500	Total	2 500

BALANCE SHEET 2: BANKS (LCC BILLIONS)			
Assets		Liabilities	
C. Notes and coins	100	A. Deposits of NBPS	5 000
D. Reserves with CB (TR)	500	B. Loans from CB (BR)	400
F. Loans to government	1 000		
G. Loans to NBPS	3 800		
Total	5 400	Total	5 400

You will also note that the banks have two types of liabilities (see Balance Sheet 2). Item A (BD of the NBPS) is money. Thus, M3 is made up of (see Figure 1):

$$\begin{aligned}
 M3 &= N\&C + BD \text{ of the domestic NBPS} \\
 &= LCC 1\,000 \text{ billion} - LCC 100 \text{ billion} + LCC 5\,000 \text{ billion} \\
 &= LCC 5\,900 \text{ billion.}
 \end{aligned}$$

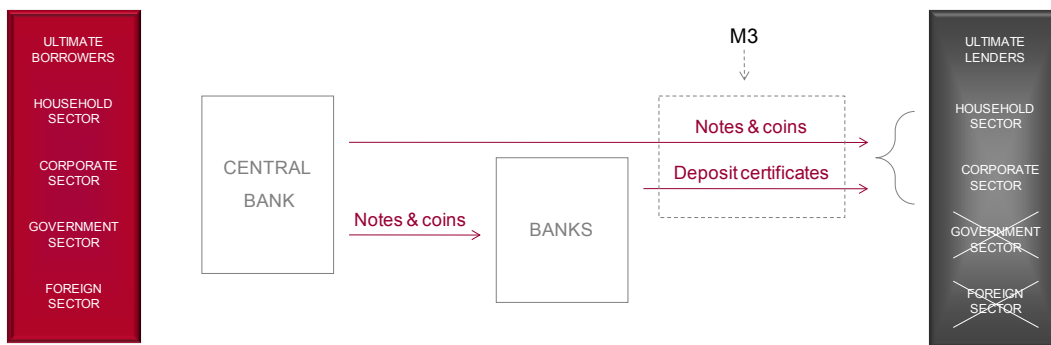


Figure 1: what is money?

Central banks calculate M3, as well as its counterparts (elucidated later), from the *consolidated balance sheet* of the banks and the CB. In most countries there are also other “monetary institutions” (such as rural banks, building societies, mutual banks, land banks and so on) ; they are also consolidated with the central bank’s and the banks’ balance sheets. The consolidated balance sheet appears as in Balance Sheet 3: called the consolidated balance sheet of the *monetary banking sector* (MBS).

BALANCE SHEET 3: MBS (LCC BILLIONS)			
Assets		Liabilities	
D. Foreign assets	1 000	A. Notes and coins of NBPS	900
E. Loans to government	2 100	B. Deposits	
		1. Government	900
		2. NBPS	5 000
F. Loans to NBPS	3 800	C. Foreign loans	100
	Total	Total	6 900
	6 900		6 900

How is a consolidated balance sheet arrived at? It nets out all the interbank claims. For ease of understanding the relevant items have been highlighted in Balance Sheets 4–5. Note that:

- CB loans to banks (LCC 400 billion) in Balance Sheet 4 are netted off against CB loans (LCC 400 billion) in Balance Sheet 5.
- Bank reserves (LCC 500 billion, found in both balance sheets) are netted off.
- N&C: LCC 1 000 billion less LCC 100 billion = LCC 900 billion (see item A in the consolidated balance sheet).

BALANCE SHEET 4: CENTRAL BANK (LCC BILLIONS)			
Assets		Liabilities	
D. Foreign assets	1 000	A. Notes and coins	1 000
E. Loans to government	1 100	B. Deposits	
F. Loans to banks (borrowed reserves – BR) @ KIR	400	1. Government	900
		2. Banks' reserve accounts (TR)	500
		C. Foreign loans	100
Total	2 500	Total	2 500

BALANCE SHEET 5: BANKS (LCC BILLIONS)			
Assets		Liabilities	
C. Notes and coins	100	A. Deposits of NBPS	5 000
D. Reserves with CB (TR)	500	B. Loans from CB (BR)	400
F. Loans to government	1 000		
G. Loans to NBPS	3 800		
Total	5 400	Total	5 400



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From the consolidated balance sheet of the MBS (Balance Sheet 3), the money stock is easily identified (the items have been highlighted): item A and item B2:

$$\begin{aligned} M3 &= A + B2 \\ &= \text{LCC 900 billion} + \text{LCC 5 000 billion} \\ &= \text{LCC 5 900 billion.} \end{aligned}$$

Of the two components of money we know that N&C is the minor party; in most countries the proportion of N&C in M3 is as low as 2%. We also know that central banks (as the sole issuers of notes and coins (in most cases) do not use N&C to create new money; they merely react to the demand for N&C, for which deposits are used as payment).

We also know that new money is created by bank lending (domestic and foreign). These sources of money creation are also found in the consolidated balance sheet (balance Sheet 3). Thus, we have the tools for an analysis of money creation. Note that what we are about to show is done by all central banks the world over on a monthly basis.

4.4 Money identity: sources of money creation

4.4.1 Introduction

We replicate the consolidated balance sheet here for ease of reference (see Balance Sheet 6).

BALANCE SHEET 6: MBS (LCC BILLIONS)			
Assets		Liabilities	
D. Foreign assets	1 000	A. Notes and coins of NBPS	900
E. Loans to government	2 100	B. Deposits	
F. Loans to NBPS	3 800	1. Government	900
		2. NBPS	5 000
		C. Foreign loans	100
Total	6 900	Total	6 900

It is evident that, because the balance sheet balances, items A + B2 must be equal to all the asset items minus the remaining liability items. Therefore:

$$M3 = A + B2 = (D + E + F) - (B1 + C).$$

It will also be evident that we should combine the related asset and liability items, and they are:

- Foreign assets and foreign loans (D – C).
- Loans to government and government deposits (E – B1).

Therefore,

$$M3 = A + B2 = (D - C) + (E - B1) + F.$$

In terms of the numbers in Balance Sheet 6 we have:

$$\begin{aligned} M3 &= A + B2 &= (D - C) + (E - B1) + F \\ M3 &= 900 + 5\,000 &= (1\,000 - 100) + (2\,100 - 900) + 3\,800 \\ &= 5\,900 &= 900 + 1\,200 + 3\,800 \\ &&= 5\,900. \end{aligned}$$

In words:

$$\begin{aligned} \text{Money stock (M3)} &= \text{its "counterparts"} &= \text{Net foreign assets} \\ &&+ \text{net loans to government} \\ &&+ \text{loans to NBPS.} \end{aligned}$$

This is the *money identity*: the “counterparts” of the money stock (the amount of money in circulation) are net foreign assets (NFA), net loans to government (NLG) and loans to the NBPS (LNBPS).

It will be evident that any change in the money stock must be equal to and therefore is “explained” by changes in NFA, NLG and LNBPS (the sources):

$$\Delta M3 = \Delta NFA + \Delta NLG + \Delta LNBPS.$$

This is the money identity: it provides an analysis of the balance sheet sources of changes (BSSoC) in M3. The actual sources are the transactions that underlie the BSSoC, and they are:

- Net foreign assets (NFA):
 - Bank and CB dealings in the foreign exchange market. If these institutions do nothing in the forex market, the market clears at a particular exchange rate. If they do, they alter the demand / supply equation of the forex market and create / destroy money, and the market will clear at a different exchange rate.
- Net loans to government (NLG):
 - Bank and CB purchases or sales of government securities.
 - The movement of NBPS deposits at banks to government (which we assume banks at the CB only), for example when taxes are paid; and the movement of government deposits to the NBPS, when government spends locally.
- Loans to the NBPS (LNBPS):
 - The demand for loans by the NBPS which is satisfied by the banks.

In most countries the latter is the overriding source of money creation, whereas in developing countries the first two mentioned play the overriding role. The accompanying chart shows the year-on-year growth rates for M3 and LNBPS over a 40-year period for a particular country. It is quite evident that the overriding BSSoC in M3 was changes in LNBPS.

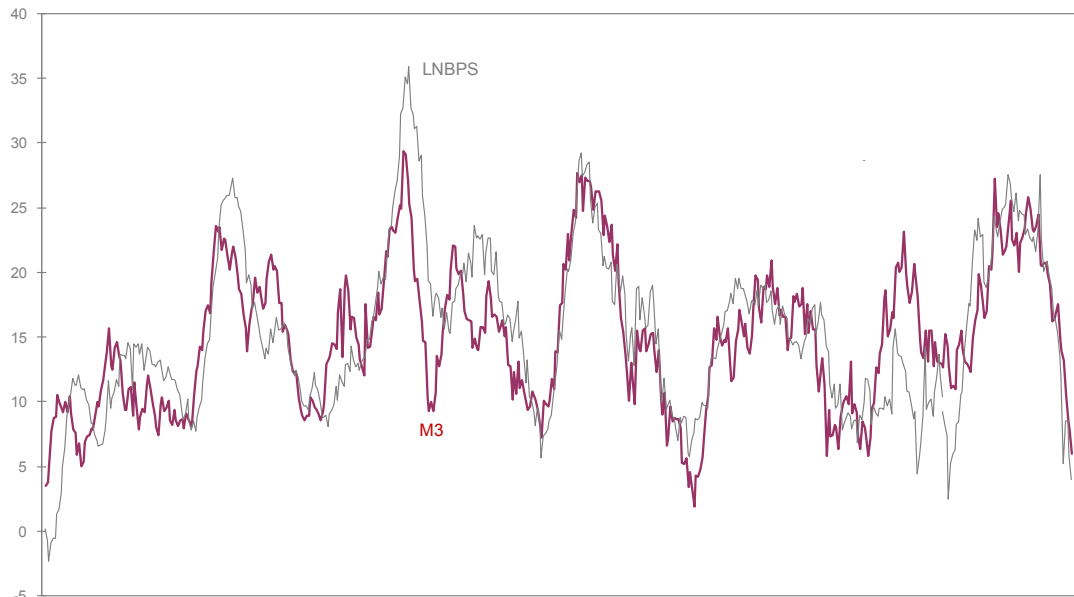


Figure 2: M3 & LNBPS (yoy%)

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4.4.2 Example: loan from bank

It will be useful to provide a few examples of the sources of changes in M3. It is to be noted that here that we do not indicate the effect of changes in bank deposits on the banks' reserve requirements. This is because we do not wish to divert attention from the principles of money creation. The effect of deposit changes on the reserve requirement is introduced at a later stage.

You will recall that when Company A sells goods to Company B and Company B acquires a loan facility from Bank A and utilises it for the purchase, the relevant balance sheets changes are as indicated in Balance Sheets 7–9 (amount = LCC 100 million).

BALANCE SHEET 7: COMPANY A (LCC MILLIONS)			
Assets		Liabilities	
Goods	-100		
Deposits at Bank A	+100		
Total	0	Total	0

BALANCE SHEET 8: COMPANY B (LCC MILLIONS)			
Assets		Liabilities	
Goods	+100	Loan from Bank A	+100
Total	+100	Total	+100

BALANCE SHEET 9: BANK A (LCC MILLIONS)			
Assets		Liabilities	
Loan to Company A	+100	Deposits of Company A	+100
Total	+100	Total	+100

Seen in the balance sheet of the MBS (see Balance Sheet 10) these transactions should be clearer. On this day (of the balance sheet construction) M3 increased by LCC 100 million and there was one BSSoC in M3: LNBPS increased by LCC 100 million. The real source was the demand for loans which was satisfied by the bank.

BALANCE SHEET 10: MBS (LCC MILLIONS)			
Assets		Liabilities	
D. Foreign assets		A. Notes and coins of NBPS	
E. Loans to government		B. Deposits	
		1. Government	
		2. NBPS	+100
F. Loans to NBPS	+100	C. Foreign loans	
Total	+100	Total	+100

4.4.3 Example: Exports

Another example: a Local Country exporter, LC Exporter (= member of NBPS), exports goods to the value of LCC 100 million to a US Importer; the exchange rate is USD / LCC 10.0 (see Balance Sheets 11–13).

BALANCE SHEET 11: LC EXPORTER (NBPS) (LCC MILLIONS)			
Assets		Liabilities	
Goods	-100		
Deposits at US Bank	+100		
Total	0	Total	0

BALANCE SHEET 12: US IMPORTER (USD MILLIONS)			
Assets		Liabilities	
Goods	+10		
US Bank deposits	-10		
Total	0	Total	0

BALANCE SHEET 13: US BANK (USD MILLIONS)			
Assets		Liabilities	
		Deposits of US Importer	-10
		Deposits of LC Exporter	+10
Total	0	Total	0

There was no change in the money stock (i.e. there was no change to the local bank's (LC Bank) balance sheet. LC Exporter now sells the LCC 100 million foreign exchange earnings (USD) to LC Bank (see Balance Sheets 14–16).

BALANCE SHEET 14: LC EXPORTER (NBPS) (LCC MILLIONS)			
Assets		Liabilities	
Deposits at US Bank	-100		
Deposits at LC Bank	+100		
Total	0	Total	0

BALANCE SHEET 15: LC BANK (LCC MILLIONS)			
Assets		Liabilities	
Deposits at US Bank	+100	Deposits of LC Exporter	+100
Total	+100	Total	+100

BALANCE SHEET 16: US BANK (USD MILLIONS)			
Assets		Liabilities	
		Deposits of LC Exporter	-10
		Deposits of LC Bank	+10
Total	0	Total	0

It will be clear that the balance sheet of LC Bank (i.e. the local bank) changed: LC Bank bought a foreign deposit of USD 10 million (= forex) and paid LC Exporter by crediting his account; this amounts to an increase in the local deposits of the NBPS = an increase in M3. In terms of the balance sheet of the MBS we have changes as indicated in Balance Sheet 17. M3 increased by LCC 100 million and the BSSoC is an increase in NFA (the increased foreign deposit). The real cause is the transaction, a portfolio decision – the purchase of forex – by LC Bank.

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BALANCE SHEET 17: MBS (LCC MILLIONS)			
Assets		Liabilities	
D. Foreign assets	+100	A. Notes and coins of NBPS	
E. Loans to government		B. Deposits	
F. Loans to NBPS		1. Government	
		2. NBPS	+100
		C. Foreign loans	
Total	+100	Total	+100

Had LC Exporter sold the forex into the forex market the market would have cleared at a better exchange rate, say USD / LCC 9.99, than when the forex was withheld by LC Bank from the commercial supply / demand forces in the forex market.

4.4 Example: government issues bonds

Another example will be useful: the government issues LCC 1 000 million bonds and they are purchased by a number of the retirement funds (= members of the NBPS) (see Balance Sheets 18–21).

BALANCE SHEET 18: GOVERNMENT (LCC MILLIONS)			
Assets		Liabilities	
Deposits at CB	+1 000	Bonds	+1 000
Total	+1 000	Total	+1 000

BALANCE SHEET 19: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	
Loans to banks @ KIR	+1 000	Government deposits	+1 000
Total	+1 000	Total	+1 000

BALANCE SHEET 20: RETIREMENT FUNDS (NBPS) (LCC MILLIONS)			
Assets		Liabilities	
Bonds	+1 000		
Deposits at banks	-1 000		
Total	0	Total	0

BALANCE SHEET 21: BANKS (LCC MILLIONS)			
Assets		Liabilities	
	0	Deposits of NBPS	-1 000
		Loans from CB @ KIR	+1 000
Total	0	Total	0

This action of government drains liquidity from the banks and they have no option but to borrow from the CB (discussed later). When the balance sheets of the banks and the CB are consolidated (see Balance Sheet 22) it will be seen that M3 has fallen by LCC 100 million and the BSSoC is a decline in NLG (a result of the increase in government deposits). The real cause is the issue of bonds. When government spends the money, which is the purpose of the debt issue, the situation will be restored (M3 will increase again).

It is important to understand that if the banks had purchased the bonds, M3 would have increased, as indicated in Balance Sheets 23–24.

BALANCE SHEET 22: MBS (LCC MILLIONS)			
Assets		Liabilities	
D. Foreign assets		A. Notes and coins of NBPS	
E. Loans to government		B. Deposits	
F. Loans to NBPS		1. Government	+100
		2. NBPS	-100
		C. Foreign loans	
Total	0	Total	0

BALANCE SHEET 23: BANKS (LCC MILLIONS)			
Assets		Liabilities	
Bonds	+1 000	Deposits of NBPS	+1 000
Total	+1 000	Total	+1 000

BALANCE SHEET 24: MBS (LCC MILLIONS)			
Assets		Liabilities	
D. Foreign assets		A. Notes and coins of NBPS	
E. Loans to government (bonds)	+1 000	B. Deposits	
F. Loans to NBPS		1. Government	
		2. NBPS	+1 000
		C. Foreign loans	
Total	0	Total	0

4.4.5 Example: bank notes

A final example: the public (members of the NBPS) pop off to the banks' ATMs and withdraw LCC 100 million in bank notes with their debit cards (= a direct debit to their current accounts) (see Balance Sheets 25–26).

Balance Sheet 27 shows for the position of the MBS, which is the same as for the banks. You will recall that $M3 = N\&C + BD$. The N&C holdings of the NBPS increased by LCC 100 million and their deposits decreased by the same amount. Thus, the money stock did not change, only the composition did. Recall that Item A in the MBS balance sheet = the CB's N&C liability less the N&C held by banks. The former was unchanged and the latter decreased by LCC 100 million.

BALANCE SHEET 25: BANKS (LCC MILLIONS)			
Assets		Liabilities	
N&C	-100	Deposits of NBPS	-100
Total	-100	Total	-100

BALANCE SHEET 26: NBPS (LCC MILLIONS)			
Assets		Liabilities	
N&C	+100		
Deposits at banks	-100		
Total	0	Total	0

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BALANCE SHEET 27: MBS (LCC MILLIONS)			
Assets		Liabilities	
D. Foreign assets		A. Notes and coins of NBPS	+100
E. Loans to government		B. Deposits	
F. Loans to NBPS		1. Government	
		2. NBPS	-100
		C. Foreign loans	
Total	0	Total	0

4.4.6 Money destruction

When banks provide new loans (to the government sector or the NBPS), or buy forex, money is created. The overriding source of money creation is bank loans in a balance sheet sense, and the demand for loans that is satisfied by the banks, in a real life sense. Obviously, the money stock can also fall, but this is rare, as seen in Figure 2. In this particular country, and it applies to most countries, not in any month did the growth rate in M3 decrease.

However, it would be amiss if a fall in the money stock was not discussed. Take the example of Mrs A. She took a loan of LCC 50 000 from Bank A in the past. In order to repay the loan, she would accumulate a balance of LCC 50 000 on her bank account over time, and repay the bank on the due date of the loan. Balance Sheets 28–29 show this transaction.

BALANCE SHEET 28: MRS A (NBPS) (LCC)			
Assets		Liabilities	
Deposit at bank	-50 000	Bank loan	-50 000
Total	-50 000	Total	-50 000

BALANCE SHEET 29: BANK A (LCC)			
Assets		Liabilities	
Bank loans (NBPS)	-50 000	Deposits of NBPS (M3)	-50 000
Total	-50 000	Total	-50 000

The position of the MBS will be the same as that of Bank A (see Balance Sheet 30).

BALANCE SHEET 30: MBS (LCC)			
Assets		Liabilities	
D. Foreign assets		A. Notes and coins of NBPS	
E. Loans to government		B. Deposits	
F. Loans to NBPS	-50 000	1. Government	
		2. NBPS	-50 000
		C. Foreign loans	
Total	-50 000	Total	-50 000

4.4.7 Bank deposits and the reserve requirement

As we have seen, by consolidating the balance sheets of the banks and the CB, all the cb2b IBM and the b2cb IBM claims were netted out. This obscures an aspect of the money market and monetary policy: the effect of changes in bank deposits on the banks' required reserves (RR). We introduce it here.

You will recall from the first example above that when Company A sells goods to Company B and Company B acquires a loan facility from Bank A and utilises it for the purchase, a new bank deposit (new money) is created. What we did not show is the effect on the RR. We now need to add the balance sheet of the CB (see Balance Sheets 31–34) (the amount of the bank loan = LCC 100 million; the RR ratio = 10% of deposits).

BALANCE SHEET 31: COMPANY A (LCC MILLIONS)			
Assets		Liabilities	
Goods	-100		
Deposits at Bank A	+100		
Total	0	Total	0

BALANCE SHEET 32: COMPANY B (LCC MILLIONS)			
Assets		Liabilities	
Goods	+100	Loan from Bank A	+100
Total	+100	Total	+100

BALANCE SHEET 33: BANK A (LCC MILLIONS)			
Assets		Liabilities	
Loan to Company B	+100	Deposits of Company A	+100
Reserves with CB (TR)	+10	Loan from CB @ KIR	+10
(RR +10)			
Total	+110	Total	+110

In this example the required reserves increase by LCC 10 million (increased deposit of LCC 100 million \times 0.10). Because Bank A cannot create CB money, the CB will make to loan to the bank (BR). The TR of the banks increases by LCC 10 million (as a result of $RR = +LCC\ 10\ \text{million}$).

BALANCE SHEET 34: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	
Loans to banks (BR) @ KIR	+10	Bank reserves (TR) (RR +10)	+10
Total	+10	Total	+10

As will be seen later, the change in RR is just one of many factors that impact on bank liquidity, and that bank liquidity management is an essential ingredient in monetary policy.

4.5 Statutory environment

In many countries monetary policy is underpinned by law, which is confirmation of the significant role of monetary policy. Examples:

In the US, the responsibility for setting monetary policy is contained in the Federal Reserve Act of 1913²⁴.

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In the UK the Bank of England Act of 1998 formally gives the operational responsibility for setting monetary policy to the Bank of England²⁵. The mandate for the European Central Bank²⁶ to conduct monetary policy is laid down in Article 105 (1) of the Treaty establishing the European Community.

In South African law, the responsibility for setting monetary policy is contained in the Constitution of the Republic of South Africa Third Amendment Act 26 of 1996 and the South African Reserve Bank Act 90 of 1989.

4.6 Objectives of monetary policy

Every student of monetary policy has a definition; ours is:

Monetary policy embodies the formulation and execution of policies by the central bank, in the form of open market operations to render its key interest rate effective, aimed at guiding bank lending rates to a level where loan demand and its counterpart, deposits (money) growth, are at a level consistent with the economy's supply elasticity, all of which are premeditated on the attainment of low inflation and high and sustainable economic output.

The Federal Reserve Board²⁷ defines monetary policy as follows:

“The term ‘monetary policy’ refers to the actions undertaken by a central bank, such as the Federal Reserve, to influence the availability and cost of money and credit to help promote national economic goals.”

Most central banks define monetary policy in terms of its objectives. Some examples follow:

Bank of England²⁸:

“The objective of monetary policy is price stability – to maintain the value of money – or, to put it another way, to restrain inflation or the general increase in the prices of goods and services. Uncertainty about inflation – and thus about future price levels – is damaging to the proper functioning of the economy. With a stable general price level, individual price signals can be read more clearly, and more rational decisions taken about whether to save or to borrow, how much to invest and to consume, and what and when to produce. In this way, price stability can help to foster sustainable long-term economic growth.”

Bank of Canada²⁹:

“The goal of Canadian monetary policy is to contribute to rising living standards for all Canadians through low and stable inflation. Specifically, the Bank aims to keep the rate of inflation...inside a target range established jointly with the government. Since 1995, the target range has been 1 to 3 per cent.”

These views may be synthesised as follows:

- Central banks have two *objectives*: one that could be termed the *primary objective* (which is best defined as *low and stable inflation*) and one that could be termed the *ultimate objective* (which is best defined as *sustainable high economic growth*).
- The ultimate objective is the dependent variable. However, low and stable inflation is *not a sufficient condition* for attainment of this lofty ideal; it is one of many, but it is the one of the most significant.
- Uncertainty about inflation is harmful to the proper functioning of the economy. High inflation is associated with low real interest rates and highly volatile nominal rates of interest. High volatility means risk, and business does not like risk. Businesses do not do well in high risk environments because their efforts are redirected to hedging risk.
- A stable general price level and stable rates of interest means that the most important economic signals are transparent, leading to lower risk and easier decision-making. In this way price stability contributes to high and sustainable long-term economic growth.

In order to achieve the primary and ultimate objectives, central banks have *intermediate objectives*, and these are many, including sustainable growth in bank loans / money and stability in other indicators such as the exchange rate and asset prices. The discussion on monetary policy thusfar may be summarised as in Figure 3. The large gap is noticeable; it is “filled” with the *operational side of monetary policy* which is covered in detail later.

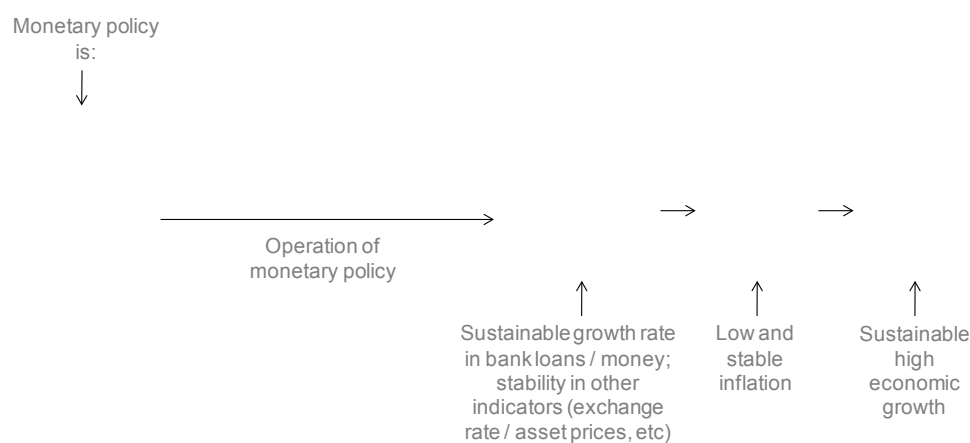


Figure 3: objectives of monetary policy

4.7 Price stability

4.7.1 Introduction

We have described the *primary objective* of central banks as the achievement of *low and stable inflation*, and the ultimate objective as *sustainable high economic growth*, to which achievement of the primary objective contributes handsomely. It is opportune to express a view here on what price stability is and what the *benefits of price stability* are.

4.7.2 What Is Price Stability?

The ECB (see Box 1) defines price stability as “...a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%”, and it adds that “Price stability is to be maintained over the medium term.” Other central banks have similar definitions, for example, an inflation target range of 3–6%.

But what does this mean for the economy? It means that central banks want to achieve low inflation on a sustainable basis because this state of affairs brings about *low volatility in prices in general and in interest rates* which is an important input in business decisions. Put another way, the private sector is able to plan ahead in terms of expenditure and investment ($C + I = GDE$; $GDE + TAB = GDP$) decisions without being constrained by uncertainty.

The advertisement features a runner in a red top and black leggings running on a path during a sunrise or sunset. The GaiTEYE logo is in the top left, with the tagline 'Challenge the way we run'. The main text reads 'EXPERIENCE THE POWER OF FULL ENGAGEMENT...' followed by 'RUN FASTER. RUN LONGER.. RUN EASIER...'. A yellow button in the bottom right says 'READ MORE & PRE-ORDER TODAY WWW.GAITEYE.COM' with a hand cursor icon.

4.7.3 What are the benefits of price stability?

The benefits of price stability are immense. The ECB articulates the benefits in Box 1. In summary:

- In general it contributes to the achievement of a higher and sustainable level of economic output and employment.
- It improves the transparency of the price mechanism.
- It contributes to bringing about stability in interest rates, the most important price in the economy in terms of savings and investment decisions.
- It contributes to the avoidance of unproductive business activities – hedging against inflation or deflation.
- It assists in restoring the equal redistribution of income and wealth.
- It contributes towards reducing the distortionary effects on economic behaviour that results from the impact of inflation on the tax and social security systems.

BOX 1: BENEFITS OF PRICE STABILITY: ECB¹

"The objective of price stability refers to the *general level of prices in the economy*. It implies *avoiding both prolonged inflation and deflation*. Price stability contributes to achieving high levels of economic activity and employment by

- improving the transparency of the price mechanism. Under price stability people can recognise changes in relative prices (i.e. prices between different goods), without being confused by changes in the overall price level. This allows them to make well-informed consumption and investment decisions and to allocate resources more efficiently;
- reducing inflation risk premia in interest rates (i.e. compensation creditors ask for the risks associated with holding nominal assets). This reduces real interest rates and increases incentives to invest;
- avoiding unproductive activities to hedge against the negative impact of inflation or deflation;
- reducing distortions of inflation or deflation, which can exacerbate the distortionary impact on economic behaviour of tax and social security systems;
- preventing an arbitrary redistribution of wealth and income as a result of unexpected inflation or deflation.

"While the Treaty clearly establishes the maintenance of price stability as the primary objective of the ECB, it does not give a precise definition of what is meant by price stability.... The ECB's Governing Council has defined price stability as 'a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%. Price stability is to be maintained over the medium term.'"

It will be recalled that the other central banks quoted earlier expressed the same sentiment: generally that price stability *contributes to achieving high levels of economic activity*, i.e. the achievement of the ultimate objective.

4.8 Inflation targeting monetary policy framework³⁰

In order to achieve the primary objective of *price stability* many countries have in place an *inflation targeting monetary policy framework*. Under this framework, a numerical target or target range for the inflation rate that is intended to be achieved over a specified time period is publicly announced by government. Thus, it is a government target, and it is to be executed by the CB, because the CB has the operational tools to best achieve it.

An *inflation-targeting monetary policy framework* is not only about the target. The other elements / advantages of the framework are:

- It makes the objective of monetary policy crystal clear and thereby improves planning in the private and public sectors.
- It makes it clear that government is part of a formalised and co-ordinated effort to contain inflation in pursuit of the broader economic objective of sustainable high economic growth and employment creation.
- It focuses monetary policy and enhances the accountability of government and the central bank to the public.
- It provides an anchor for expectations of future inflation which has an influence on price and wage setting.
- It often contains the caveat of the target being flexible, as manifested in a target range (in some cases), and it is to be attained over a period (usually the medium term).

As regards the last point: some discretion is allowed because circumstances can arise which dictate that exclusive emphasis on inflation goals is not appropriate. Examples are: natural disasters, large and disruptive international capital flows, supply shocks such as a spike in the oil price, demand shocks such as a sharp fall in the demand for cocoa (Ghana) or copper (Zambia). In these circumstances a rigorously applied rule deprives the central bank of its ability to deal effectively with them. Some discretion must be applied in order to avoid costly losses in terms of output and jobs.

Although discretion is claimed as a right by most central banks, they are mindful of the importance of the *credibility* of the CB and of the target. One CB³¹ articulates in this regard:

“It is...also important that the inherent discipline of inflation targeting is not foregone by applying discretion. The objective of the exercise is, after all, to achieve the target range. An inflation-targeting monetary policy framework can only be successful if the public is convinced that the central bank is serious about containing inflation. The benefits of inflation targeting depend on whether wage and price setting are responsive to the inflation target of the authorities. Public buy-in is essential to obtain low inflation and its consequent benefits for all. This requires a national effort, anchoring expectations around the inflation range.”

Inflation targets replace money stock growth rate targets. The *inflation-targeting monetary policy framework* still regards money stock and bank loan extension as critically important, and they are monitored closely, but together with other economic indicators such as:

- The level of international interest rates.
- The shape and position of the yield curve.
- Changes in nominal and real salaries and wages.
- Changes in employment.
- Nominal unit labour costs.
- The gap between potential and actual national output.
- General money market conditions.
- Changes in asset prices.
- The overall balance of payments position.
- The terms of trade.
- Exchange rate developments.
- Public sector borrowing requirement.



4.9 Monetary policy accountability and transparency³²

In the previous section we mentioned the virtues of the *inflation-targeting monetary policy framework* in terms of monetary policy accountability and transparency. We take these issues further here. The following steps are taken by most central banks to enhance monetary policy accountability and transparency:

- The inflation target is announced openly to the public; in this way it indicates visibly that the central bank is accountable for the target and makes the application of the inflation targeting framework as transparent as possible.
- Announcement of the target makes the intent of monetary policy explicit; the corporate sector is therefore well-informed and better able to plan in terms of production and expansion of production.
- If the target is not met, the central bank has to explain the situation to the public (in Parliament).
- The governor of the central bank is obliged to report to the Minister of Finance (Parliament) twice per annum and report on the stance of monetary policy.
- The monetary policy stance of the central bank is communicated regularly to the public in various formats:
 - A *monetary policy statement* issued after each meeting of the Monetary Policy Committee (MPC).
 - In some cases central banks invite the public to *Monetary Policy Forums* held in the major centres of the country, where presentations are made and discussions are held in which the public participates.
 - In some cases central banks publish a *Monetary Policy Review*; it describes in more detail the decisions taken by the central bank and analyses the factors that could have an influence on future inflation.

These components of accountability and transparency are mostly common to the central banks that have adopted an inflation targeted monetary policy. With regard to the situation in the UK, the Bank of England³³ reports:

“Increased accountability to Parliament and the public is achieved through the publication of the minutes, and the continued publication of the Bank’s Inflation Report, as well as through appearances by MPC members before the Treasury Select Committee of Parliament and through the Bank’s Annual Report. The Governor is also obliged to write an open letter to the Chancellor if inflation deviates more than 1% on either side of the 2.5% target. Under certain circumstances, the Bank of England Act allows the Treasury to give instructions to the Bank in the field of monetary policy for a limited period of time. These powers can only be used if the Treasury is satisfied that they are required in the public interest and only by ‘extreme economic circumstances.’”

4.10 Limitations of monetary policy

It should be evident from the discussion above that there is a limit to what monetary policy can achieve. The ultimate objective of all governments is to improve the welfare of the nation. There are many factors that contribute to the welfare of people: education, work ethic, culture, mineral resources, technology, population growth, political stability, price stability, etc.

Price stability is just one of these factors, meaning that the central bank cannot achieve the lofty ideal of improving the welfare of the nation; it can merely make a contribution to this ideal. Price stability is the only factor that is firmly within the control of the central bank. The view of the ECB³⁴ is relevant:

“In the long run a central bank can only contribute to raising the growth potential of the economy by maintaining an environment of stable prices. It cannot enhance economic growth by expanding the money supply or keeping short-term interest rates at a level inconsistent with price stability. It can only influence the general level of prices.

“Ultimately, inflation is a monetary phenomenon. Prolonged periods of high inflation are typically associated with high monetary growth. While other factors (such as variations in aggregate demand, technological changes or commodity price shocks) can influence price developments over shorter horizons, over time their effects can be offset by a change in monetary policy.”

The South African Reserve Bank³⁵ articulates in this regard:

“...the Bank...believe[s] that the best contribution that monetary policy can make to growth is to provide a low and stable inflation environment that is conducive to sustainable long-term growth.”

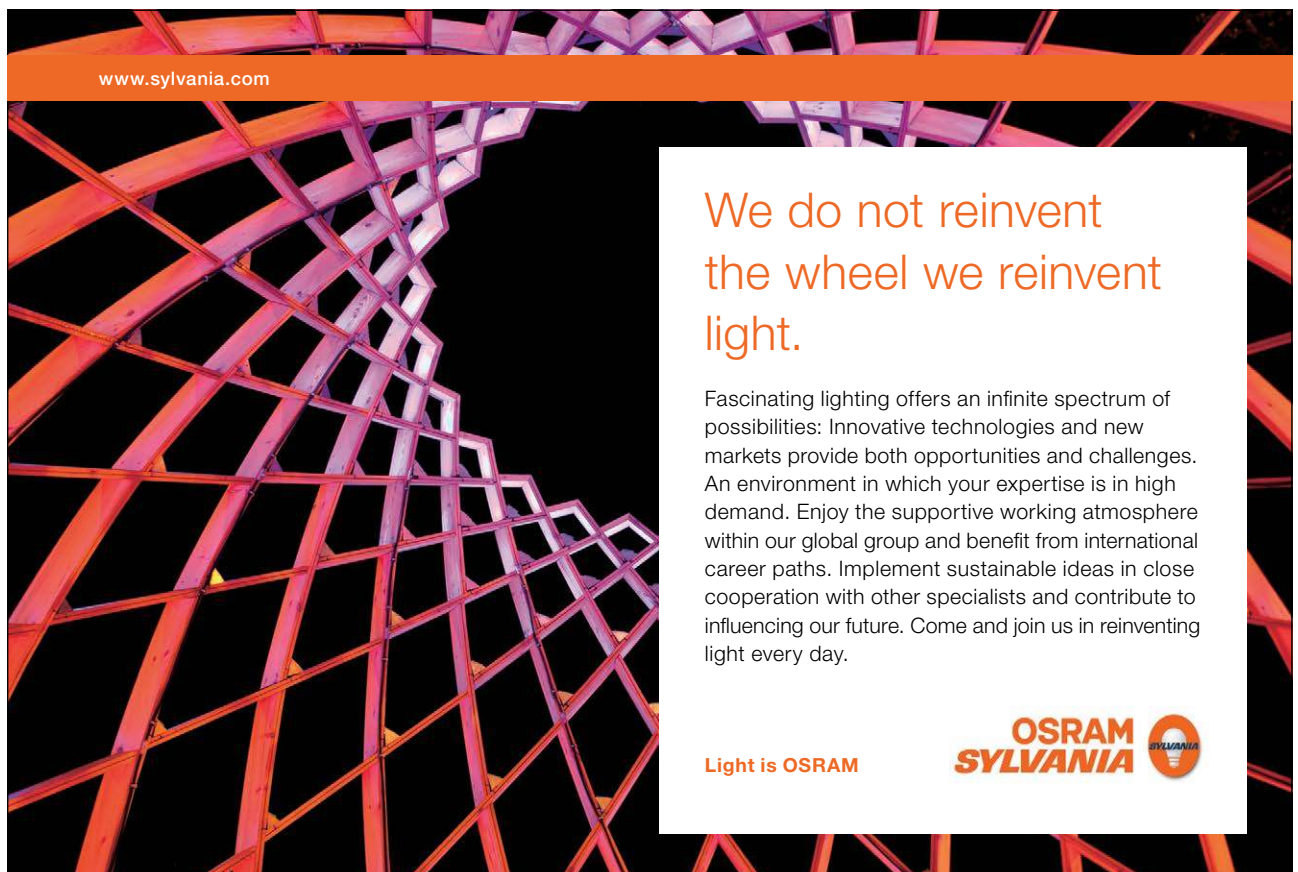
4.11 Instruments of monetary policy

Monetary policy had a chequered career in most countries, and a look over the shoulder to the past reveals some instruments of policy that would make a young central banker cringe. In general, today there is little debate on the instruments of monetary policy; it is almost a case of the existence of a standard set of instruments, and the only differences that exist are nuance-like.

Why then dig up the old instruments of monetary policy? The first reason is completeness and the second is history. One needs to be reminded of the “dreadful” past in terms of instruments of monetary policy, in order to avoid them. We hasten to add that the present-day instruments, while effective, can also be harmful in the hands of a non-independent central bank coupled with a delinquent President / Prime Minister.

Meijer³⁶ provides a comprehensive list of monetary policy instruments used in the past and presently:

- Management of the public debt.
- Open market operations.
- Central bank discount policy.
- Variations in the reserve requirements for banks or (more generally) in the prescriptions governing the portfolio compositions of banks and other financial institutions.
- Imposition and variation of quantitative restrictions on bank lending (credit “ceilings”).
- Selective credit controls.
- Deposit and/or lending interest rate controls.
- Moral suasion.
- Variations in the terms and conditions of hire-purchase and instalment credit (consumer credit).
- Capital issues control.
- Import deposit schemes.
- Official foreign borrowing (under certain conditions).
- Changes in exchange control regulations (under certain conditions).
- Central bank intervention in the spot and forward foreign exchange markets (under certain conditions).




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The instruments of monetary policy can be classified into the new / indirect / market oriented, and old / direct / non-market oriented instruments. We begin with the latter.

The old / direct / non-market oriented instruments of monetary policy are those that are used to accomplish the aims of monetary policy by *prescription* of the conduct of banks. They do not rely on market forces to influence the behaviour of banks, and usually engage inflexible behaviour rules or the specification of certain quantitative rules. Usually, if the banks do not comply with the rules penalties or prosecution is possible. Examples include:

- Quantitative ceilings on bank lending.
- Specified interest rate ceilings and / or floors on loans and deposits.
- Exchange controls.
- Simultaneous quantitative control of bank reserves and interest rate control.

The new / indirect / market oriented (*new* in the sense of a few decades) instruments of monetary policy are those that are used to accomplish the aims of monetary policy by influencing the banks' and the public's conduct in respect of their lending and borrowing activities. The *influencing* arises from interest rate changes brought about by the central bank in its KIR which in turn influence rates in the financial markets (but they remain linked to the KIR).

An administered rate (KIR) change does not imply "market oriented". This is so, but it rests on the fact that the vast majority of the money stock is bank deposits of the NBPS. Because of this banks are able to create money (deposits) by mere lending, provided a demand for loans exists. Thus, normal supply and demand forces are absent, and some entity is required to generate the genesis interest rate. The CB provides this in the form of the KIR and this rate influences the b2b IBM rate and banks' deposit rates (bank liabilities) and, via the bank margin, bank lending rates, which in turn influences the public's demand for bank loans. Thus, the CB exercises a large measure of discretion.

As we have seen, the KIR is only effective if the banks are actually indebted to the CB, i.e. making use of BR. This means that the CB has to create and maintain a condition of a liquidity shortage (LS). This is where open market operations (OMO) enter the fray. The CB makes use of the *open market* for financial instruments to bring about a permanent LS:

- Buying and selling government securities (treasury bills and government bonds).
- Forex swaps with the banks.
- Issues and repurchases of CB securities.
- Shifting government funds between the Exchequer Account at the CB and the TLAs at the banks.

A caveat: in abnormal times a liquidity surplus can prevail, also brought about by the CB through OMO. The motivation is to coerce banks to drop interest rates to the lowest level possible.

In summary: in normal times the instruments of monetary policy are:

- Creation of a LS condition to make KIR effective.
- Changing KIR when appropriate.
- Executing OMO in its various forms in order to ensure a LS condition.

Figure 4 completes Figure 3 by including these instruments of monetary policy; when combined they represent the *operation of monetary policy*.

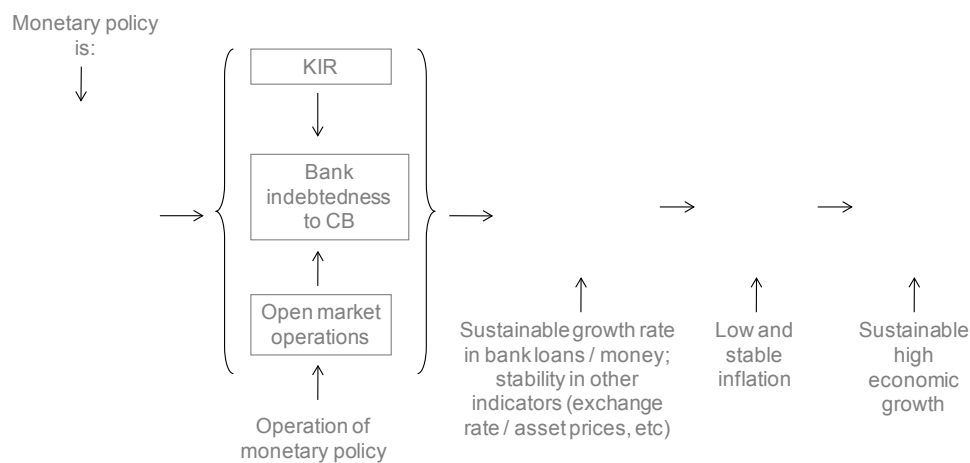


Figure 4: monetary policy

The effective application of these instruments is dependent on a developed financial system in which price discovery is efficient.

4.12 Independence of central banks

There is not much debate on the independence of central banks. It is generally accepted that total operational independence is the norm, and that consultation with the Treasury is required, and is acknowledged as not compromising monetary policy.

The independence of central banks is imbedded in statute in most countries. For example, in the case of the South African Reserve Bank its independence is imbedded in the Constitution. Subsection (2) of section 224 (“Primary object”) states in this regard:

“The South African Reserve Bank, in pursuit of its primary object, must perform its functions independently and without fear, favour or prejudice, but there must be regular consultation between the Bank and the Cabinet member responsible for national financial matters.”

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